Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services

STATEMENT OF BASIS

BASF Corporation
Acetylene Plant
Geismar, Ascension Parish, Louisiana
Agency Interest Number: 2049
Activity Number: PER20050005
Draft Permit 2526-V2

I. APPLICANT:

Company:
BASF Corporation
P.O. Box 1562, Lake Charles, LA 70602

Facility:
Acetylene Plant
8404 River Road, Geismar, Ascension Parish, Louisiana
Approximate UTM coordinates are 692.926 kilometers East and 3342.803 kilometers North, Zone 15

II. FACILITY AND CURRENT PERMIT STATUS:

The BASF Geismar Facility manufactures acetylene, amine compounds, aniline, ethylene oxide, gamma-butyrolactone, ethylene glycol, glyoxal, 1,4-butanediol, gasoline additives, methyllenediphenyl diisocyanate, N-methyl-2-pyrrolidone, polyols, surfactants, tetrahydrofuran, polytetrahydrofuran, toluenediisocyanate, N-vinyl-2-pyrrolidone, and polyvinylpyrrolidone.

The Acetylene Plant is designed to produce 120 million pounds per year of acetylene. Acetylene is produced when natural gas is reformed to produce acetylene-rich syngas. Acetylene is recovered in a solvent absorption/desorption process. The syngas residue is sent off-site for hydrogen and carbon monoxide recovery.

Vents from the towers, analyzers, and drums are controlled by flares or preheaters. Low NOx burners are used to control nitrogen oxides emissions from the preheaters. Fugitive emissions are minimized by a streamlined leak detection and repair (LDAR) program that complies with LAC 33:III.2122. The emission cap (ACECAP01) covers the Acetylene Plant's combustion sources comprised of six preheaters and four flares.

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A Part 70 permit addressing the Acetylene Plant has already been issued.

Permit #	Units or Sources	Date Issued
2526-V1	ACETYLENE PLANT	10/02/2000

III. PROPOSED PERMIT / PROJECT INFORMATION:

Proposed Permit

A permit application and Emission Inventory Questionnaire (EIQ) dated April 5, 2005 were received requesting a Part 70 operating permit renewal, 2526-V2, for the Acetylene Plant.

A notice requesting public comment on the proposed permit was published in *The Advocate*, Baton Rouge, Louisiana, on <DATE>; and *Gonzales Weekly*, Gonzales, Louisiana, on <DATE>. The proposed permit was also sent to US EPA Region VI.

The facility currently operates under Permit No. 2526-V1, issued October 2, 2000.

Project Description

BASF proposes that emission rates of this plant will increase slightly yet will remain below federal regulatory trigger levels. Emission rates will increase as a result of reconciliation of emissions (mainly fugitive).

Permitted Air Emissions

Estimated changes in permitted emissions from the Conversion Optimization Unit in tons per year are as follows:

Pollutant	Permitted Before	Permitted After	Permitted Change
PM_{10}	9.47	9.60	+0.13
NO_x	0.58	0.58	0.00
SO_2	36.25	36.25	0.00
CO	35.10	34.90	-0.2
VOC*	4.91	5.13	+0.22

*** VOC LAC 33:III Chapter 51 Toxic Air Pollutants (TAPs):**

Pollutant	Before	After	Change
1,3 Butadiene	0.005	0.02	+0.015
Benzene	0.022	0.04	+0.018
Formaldehyde	0.00	0.01	+0.01
n-Hexane	0.00	0.01	+0.01
Total	0.027	0.08	+0.053

Other VOC (TPY): 5.08

Prevention of Significant Deterioration Applicability

This permit was reviewed for compliance with 40 CFR 70, the Louisiana Air Quality Regulations, New Source Performance Standards (NSPS), and National Emission Standards for Hazardous Air Pollutants (NESHAP).

There is no physical change in the method of operation, therefore the modifications/revisions proposed in this application do not trigger PSD review. Prevention of Significant Deterioration (PSD) does not apply.

MACT requirements

The BASF Geismar Site is a major source of toxic air pollutants (TAPs). Facility-wide emissions of 1,3-butadiene, benzene, formaldehyde, and n-Hexane are emitted in quantities above the Minimum Emission Rate (MER) and are controlled by Maximum Achievable Control Technology (MACT) in accordance with Compliance Plan No. 92067, approved November 1, 1994.

Air Modeling Analysis

Not Applicable.

General Condition XVII Activities

BASF has identified activities that meet the requirements of General Permit Condition XVII. The activities which BASF has identified for the Acetylene Plant include:

- Emptying and draining equipment; and
- Collection of samples.

Work Activity	Schedule	Emission Rates - tons				
		PM_{10}	SO_2	NO_X	CO	VOC
Emptying and Draining Equipment	Daily					0.35
Collection of Samples	3376/yr					0.02
Total						**0.37**

Insignificant Activities

All Insignificant Activities are authorized under LAC 33:III.501.B.5. For a list of approved Insignificant Activities, refer to Section IX of the draft Part 70 permit.

IV. Permit Shields

No permit shield has been granted.

V. Periodic Monitoring

The Monitoring, Reporting, and Recordkeeping necessary to demonstrate compliance with the applicable terms, conditions and standards are provided in the Facility Specific Requirements Section of the proposed permit.

VI. Applicability and Exemptions of Selected Subject Items

A complete listing of applicable and exempted state and federal air quality requirements for each subject item is included in the draft Part 70 permit, Table 2.

VII. Streamlined Requirements

Permittee shall comply with a streamlined equipment leaks monitoring program. Compliance with the streamlined program in accordance with this specific condition shall serve to comply with each of the applicable fugitive emission monitoring programs being streamlined, as indicated in the following table. Noncompliance with the streamlined program in accordance with this specific condition may subject the permittee to enforcement action for one or more of the applicable fugitive emissions programs.

a. Permittee shall apply the streamlined program to the combined universe of components subject to any of the programs being streamlined. Any component type which does not require periodic monitoring under the overall most stringent program, Louisiana MACT Determination for Non-HON Equipment Leaks, dated March 30, 1995, shall be monitored as required by the most stringent requirements of any other program being streamlined and will not be exempted. The streamlined program will include any exemptions based on size of component available in any of the programs.

b. Permittee shall use leak definitions and monitoring frequency based on the overall most stringent program. Percent leaker performance shall be calculated using the provisions of the overall most stringent program (LAC 33:III.2122). Annual monitoring shall be defined as once every four quarters.

c. Permittee shall comply with recordkeeping and reporting requirements of the overall most stringent program. Semiannual reports shall be submitted on September 30 and March 31, to cover the periods January 1 through June 30 and July 1 through December 31, respectively. The semiannual reports shall include any monitoring performed within the reporting period.

Unit or Plant Site	Programs Being Consolidated	Stream Applicability	Overall Most Significant Program
Acetylene Plant	LAC 33:III.5109 (non-HON)	5% Class I & II	LAC 33:III.2122
	NSPS Subpart VV	10% VOC	
	LAC 33:III.2122	10% VOC	

VIII. Glossary

Maximum Achievable Control Technology (MACT) - The maximum degree of reduction in emissions of each air pollutant subject to LAC 33:III.Chapter 51 (including a prohibition on such emissions, where achievable) that the administrative authority, upon review of submitted MACT compliance plans and other relevant information and taking into consideration the cost of achieving such emission reduction, as well as any non-air-quality health and environmental impacts and energy requirements, determines is achievable through application of measures, processes, methods, systems, or techniques.

Nitrogen Oxides (NO_x) - Compounds whose molecules consists of nitrogen and oxygen.

Part 70 Operating Permit- Also referred to as a Title V permit, required for major sources as defined in 40 CFR 70 and LAC 33:III.507. Major sources include, but are not limited to, sources which have the potential to emit: $\geq$ 10 tons per year of any toxic air pollutant; $\geq$ 25 tons of total toxic air pollutants; and $\geq$ 100 tons per year of regulated pollutants (unless regulated solely under 112(r) of the Clean Air Act) (25 tons per year for sources in non-attainment parishes).

PM_{10}- Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by the method in Title 40, Code of Federal Regulations, Part 50, Appendix J.

Potential to Emit (PTE) - The maximum capacity of a stationary source to emit any air pollutant under its physical and operational design.

Prevention of Significant Deterioration (PSD) – A New Source Review permitting program for major sources in geographic areas that meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. PSD requirements are designed to ensure that the air quality in attainment areas will not degrade.

Sulfur Dioxide (SO_2) – An oxide of sulphur.

Title V Permit – See Part 70 Operating Permit.

Volatile Organic Compound (VOC) - Any organic compound which participates in atmospheric photochemical reactions; that is, any organic compound other than those which the administrator of the U.S. Environmental Protection Agency designates as having negligible photochemical reactivity.